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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

PHAN, TAM T

ART UNIT PAPER NUMBER

2144

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/690,010

Applicant(s)

YAMANAKA ET AL.

Examiner

Tam (Jenny) Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/02/2005
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. Amendment received on 02/09/2005 has been entered. Claims 1 and 9 are currently amended. Claims 2-8 and 10-18 are previously presented.
2. Claims 1-18 are presented for examination.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
4. The effective filing date for the subject matter defined in the pending claims which has support in parent JP 2000-022567 in this application is 01/31/2000. Any new subject matter defined in the claims not previously disclosed in parent JP 2000-022567, is entitled to the effective filing date of 10/17/2000.

Information Disclosure Statement

5. An initialed and dated copy of Applicant's IDS form 1449, received on 02/02/2005 is attached to the instant Office action.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5, 8, 9-13, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touma et al. (U.S. Patent Number 6,288,809), hereinafter referred to

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as Touma, in view of Matsunaga et al. (U.S. Patent Number 6,434,164), hereinafter referred to as Touma.

8. Regarding claim 1, Touma disclosed a digital content downloading system using a network in which digital content possessed by a digital content retailer communicatively coupled to the network, is downloaded to one of a plurality of consumers through the network, comprising:

a plurality of subscriber lines each formed of an optical fiber and arranged between the consumers and the network, the network being managed by a network operator (Abstract, Figures 13 and 16, column 1 lines 19-30, column 4 lines 60-67);

an optical line terminator [optical service unit], arranged on one side of the network, for terminating a subscriber line on the network side (Figures 1, 5, 13, and 16, column 5 lines 1-19, lines 51-64);

an optical network unit [ONU], arranged on a side of each consumer, for terminating a subscriber line on the consumer side (Figures 1, 5, 13 and 16, column 5 line 65-column 6 line 8); and

a star coupler configured to connect the subscriber lines terminated by the optical network units to the subscriber line terminated by the optical line terminator (Figures 1, 5, 13 and 16, column 1 lines 23-30).

9. Touma taught the invention substantially as claimed. However, Touma did not expressly teach a resource reservation server configured to reserve a particular bandwidth for the digital content in the subscriber lines in response to a request by a particular consumer; and downward bandwidth managing means for controlling downloading of the digital content from the digital content retailer to the optical network unit of the particular consumer so that the digital content is transmitted through the subscriber lines and the star coupler at the particular bandwidth reserved by the resource reservation server.

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10. Touma suggested exploration of art and/or provided a reason to modify the digital content downloading system with the bandwidth reservation and management features (column 9 lines 49-54, column 10 lines 61-67).

11. In an analogous art, Matsunaga disclosed digital content downloading system such as passive optical star network comprising:

a resource reservation server [reservation bandwidth quantity control means] for reserving a particular bandwidth for the digital content in the subscriber lines in response to a request by a particular consumer (Figure 2 signs 10f and 10j, Figure 13 sign 80, column 2 lines 47-57);

and downward bandwidth managing means, arranged in the optical line terminator [center station], for controlling the downloading of the digital content from the digital content retailer to the optical network unit of the particular consumer to transmit the digital content through the subscriber lines and the star coupler at the particular bandwidth reserved by the resource reservation server (Figure 2 signs 10f, 310, 312, 10i, 306, and 10k, column 10 lines 26-50).

12. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Touma with the teaching of Matsunaga to include the bandwidth reservation feature in order to guarantee quality of service in the downstream and upstream channel (Figure 1, column 1 lines 52-57) since services such as audio and video transmission must be guaranteed (column 1 lines 52-57).

13. Regarding claim 2, Matsunaga disclosed a digital content downloading system using a network, wherein the particular bandwidth for the digital content reserved in response to the request by the particular consumer by the resource reservation server is guaranteed in a shared bandwidth of the subscriber lines (Figure 3 sign 410, Figure 13, column 1 lines 52-57).

14. Regarding claim 3, Touma and Matsunaga combined disclosed a digital content downloading system using a network, wherein the particular bandwidth for the digital

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content reserved by the resource reservation server in response to the request by the particular consumer is guaranteed in a first signal having a wavelength differing from that of a second signal corresponding to a shared bandwidth of the subscriber lines (Touma, column 6 lines 28-44, column 5 lines 51-64, column 6 lines 1-8; Matsunaga, column 8 lines 18-32).

15. Regarding claim 4, Touma disclosed a digital content downloading system using a network wherein the optical network unit arranged on the side of the particular consumer comprises: an optical wavelength demultiplexing unit configured to demultiplex a multiplexed optical signal of a first wavelength transmitting through the subscriber line (Abstract, Figure 1 signs 2, 3, 24, 25, column 2 lines 33-46); a first optical receiving unit configured to receive a plurality of optical signals of the first wavelength demultiplexed by the optical wavelength demultiplexing unit and to convert the optical signals into a plurality of digital signals (Figure 1 signs 4-5, 22-23, column 5 lines 12-19); a passive optical network processing unit configured to extract data of the digital content from the digital signals obtained by the first optical receiving unit (Figure 1, column 5 lines 51-64); a plurality of interfaces, connected to a plurality of terminals in one-to-one correspondence, configured to respectively transmit data matching the corresponding terminal to the corresponding terminal (Figures 1 and 8, column 5 lines 28-44); and a destination judging and header processing unit configured to judge the destination of the data of the digital content extracted by the passive optical network processing unit to determine a particular terminal to which the data of the digital content is downloaded, to perform header processing for the data of the digital content to identify the content retailer, and to transmit the data of the digital content to the

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particular terminal through one interface corresponding to the particular terminal (Abstract, Figures 4A-4B, 8, 10, column 10 lines 30-49).

16. Regarding claim 5, Touma disclosed a digital content downloading system using a network wherein the optical network unit arranged on the side of the particular consumer comprises an optical wavelength demultiplexing unit for configure to demultiplex a first multiplexed optical signal of a first wavelength transmitting through the subscriber line to a plurality of first optical signals of the first wavelength and to demultiplex a second multiplexed optical signal of a second wavelength transmitting through the subscriber line to a plurality of second optical signals of the second wavelength, the second multiplexed optical signal including data of the digital content of which the particular bandwidth is reserved by the resource reservation server (Abstract, Figures 1, column 5 lines 1-27, lines 51-64, column 10 lines 30-45); a first optical receiving unit configure to receive the first optical signals of the first wavelength from the optical wavelength demultiplexing unit and to convert the first optical signals into a plurality of first digital signals (Figure 1 signs 4-5, 22-23, column 5 lines 12-19); a second optical receiving unit configure to receive the second optical signals of the second wavelength from the optical wavelength demultiplexing unit and to convert the second optical signals into a plurality of second digital signals (column 5 lines 28-44); a passive optical network processing unit configure to extract the data of the digital content from the second digital signals obtained by the second optical receiving unit (Figure 1, column 5 lines 51-64); a plurality of interfaces, connected to a plurality of terminals in one-to-one correspondence, configure to respectively transmit data matching the corresponding terminal to the corresponding terminal (Figures 1 and 8,

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column 5 lines 28-44); and a destination judging and header processing unit for judging the destination of the data of the digital content extracted by the passive optical network processing unit to determine a particular terminal to which the data of the digital content is downloaded, to perform a header processing for the data of the digital content to identify the content retailer, and to transmit the data of the digital content to the particular terminal through one interface corresponding to the particular terminal (Abstract, Figures 4A-4B, 8, 10, column 10 lines 30-49).

17. Regarding claim 8, Matsunaga disclosed a digital content downloading system using a network, wherein the digital content is a music file, a video file, or a game software title (column 1 lines 14-24, lines 52-57).

18. Regarding claims 9-13 and 16, the limitations of these claims are similar to the system of claims 1-5 and 8, and thus these claims are rejected using the same rationale.

19. Regarding claim 17, Matsunaga disclosed a digital downloading system wherein the resource reservation server is arranged in the network center station [optical line terminator] and separate from the optical networking units (Figure 2, Figure 13). It would have been obvious to re-arrange the server to locate separate from the center station since network device can locate anywhere as long they serve their purpose as specified by the required system.

20. Regarding claim 18, Matsunaga disclosed a digital downloading system wherein the resource reservation server is configured to reserve the particular bandwidth so that the particular bandwidth is reserved from a particular start time to a particular end time (column 3 lines 28-51, column 5 lines 59-67).

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21. Since all the limitations of the claimed invention were disclosed by the combination of Touma and Matsunaga, claims 1-5, 8, 9-13, and 16-18 are rejected.

22. Claims 6-7 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touma et al. (U.S. Patent Number 6,288,809), hereinafter referred to as Touma, in view of Matsunaga et al. (U.S. Patent Number 6,434,164), hereinafter referred to as Touma, and further in view of Sawyer (U.S. Patent Number 5,828,737).

23. Regarding claim 6, Touma disclosed a digital content downloading system using a network in which digital content possessed by a digital content retailer is downloaded to one of a plurality of consumers through a network, comprising: a plurality of subscriber lines each formed of an optical fiber and arranged between the consumers and the network, the network being managed by a network operator (Abstract, Figures 13 and 16, column 1 lines 19-30, column 4 lines 60-67); an optical line terminator [optical service unit], arranged on one side of the network, for terminating a subscriber line on the network side (Figures 1, 5, 13, and 16, column 5 lines 1-19, lines 51-64); an optical network unit [ONU], arranged on a side of each consumer, for terminating a subscriber line on the consumer side (Figures 1, 5, 13 and 16, column 5 line 65-column 6 line 8); a star coupler configured to connect the subscriber lines terminated by the optical network units to the subscriber line terminated by the optical line terminator (Figures 1, 5, 13 and 16, column 1 lines 23-30). Matsunaga disclosed a digital content downloading system such as passive optical star network comprising a resource reservation server [reservation bandwidth quantity control means] for reserving a particular bandwidth for the digital content in the subscriber lines in response to a

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request by a particular consumer (Figure 2 signs 10f and 10j, Figure 13 sign 80, column 2 lines 47-57); and downward bandwidth managing means, arranged in the optical line terminator [center station], for controlling the downloading of the digital content from the digital content retailer to the optical network unit of the particular consumer to transmit the digital content through the subscriber lines and the star coupler at the particular bandwidth reserved by the resource reservation server (Figure 2 signs 10f, 310, 312, 10i, 306, and 10k, column 10 lines 26-50).

24. The combination of Touma and Matsunaga taught the invention substantially as claimed. However, Touma and Matsunaga did not teach a digital content downloading system using a network, wherein the content retailer charges the particular consumer for the downloading of the digital content according to the particular bandwidth reserved by the resource reservation server, a time period used for the downloading or a time zone used for the downloading.

25. Matsunaga suggested exploration of art and/or provided a reason to modify the digital content downloading using network with the bandwidth-billing feature for subscriber services (Title, column 1 lines 52-56).

26. Sawyer disclosed a digital content downloading system using a network, wherein the content retailer is configured to charge the particular consumer for the downloading of the digital content according to the particular bandwidth reserved by the resource reservation server, a time period used for the downloading or a time zone used for the downloading (Title, Abstract, Figures 1 and 3B, column 1 lines 2 lines 1-5, 7-18, column 4 lines 6-32, column 5 lines 29-54).

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27. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the combined system of Touma and Matsunaga with the teaching of Sawyer to include the bandwidth billing feature in order to accurately charge the subscriber (Sawyer, column 1 lines 54-67) since charging users for access to and the use of the communication system is an important concern for the service providers (Sawyer, column 4 lines 6-13).

28. Regarding claim 7, Sawyer disclosed a digital content downloading system using a network, wherein information of charges corresponding to a bandwidth used for the downloading of data including the digital content, a time period used for the downloading of data including the digital content, or a time zone used for the downloading of data including the digital content is transmitted from the network operator to the consumers (Title, Abstract, Figures 1 and 3B, column 1 lines 2 lines 1-5, 7-18, column 4 lines 6-32, column 5 lines 29-54, column).

29. Regarding claims 14-15, the limitations of these claims correspond directly to the system of claims 6-7, and thus these claims are rejected using the same rationale.

30. Since all the limitations of the claimed invention were disclosed by the combination of Touma and Matsunaga, claims 6-7 and 14-15 are rejected.

31. Claims 1-3, 6-8, 9-11, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al. (EP 869634), hereinafter referred to as Wright, in view of Caterisano (WO 9818235).

32. Regarding claim 1, Wright disclosed a digital content downloading system using a network in which digital content possessed by a digital content retailer

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communicatively coupled to the network, is downloaded to one of a plurality of consumers through the network, comprising:

a plurality of subscriber lines each formed of an optical fiber and arranged between the consumers and the network, the network being managed by a network operator (Figures 1-2, Figure 6 sign 26, Figure 16 sign 261)

an optical line terminator [OLT], arranged on one side of the network, for terminating a subscriber line on the network side (Figure 1 sign 2) ;

an optical network unit, arranged on a side of each consumer, for terminating a subscriber line on the consumer side (Figures 1 signs 4₁ – 4₄);

a star coupler configured to connect the subscriber lines terminated by the optical network units to the subscriber line terminated by the optical line terminator (Figure 2 sign 10).

33. Wright taught the invention substantially as claimed. However, Wright did not expressly teach a resource reservation server configured to reserve a particular bandwidth for the digital content in the subscriber lines in response to a request by a particular consumer; and downward bandwidth managing means for controlling downloading of the digital content from the digital content retailer to the optical network unit of the particular consumer so that the digital content is transmitted through the subscriber lines and the star coupler at the particular bandwidth reserved by the resource reservation server.

34. Wright suggested exploration of art and/or provided a reason to modify the digital content downloading system with the bandwidth reservation and management features (Figure 8, Figure 16 sign 261).

35. In an analogous art, Caterisano disclosed digital content downloading system such as passive optical star network comprising:

a resource reservation server for reserving a particular bandwidth for the digital content in the subscriber lines in response to a request by a particular consumer (Abstract, Figures 8, page 43 lines 22-27, page 44 lines 3-17);

and bandwidth managing means for controlling the downloading of the digital content from the digital content retailer to the optical network unit of the particular consumer to transmit the digital content through the subscriber lines and the star coupler at the particular bandwidth reserved by the resource reservation server (Abstract, Figures 3-5, page 3 lines 3-14, page 43 lines 22-27, page 44 lines 3-17, page 45 lines 3-12).

36. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Wright with the teaching of Caterisano to include the bandwidth reservation feature in order to guarantee quality of service in downloading digital content (Caterisano, page 2 lines 3-14, page 4 lines 12-26) since users of digital data such as voice, audio, and video transmission required high and guarantee bandwidth (Caterisano, page 3 lines 3-14).

37. Regarding claim 2, Caterisano disclosed a digital content downloading system using a network, wherein the particular bandwidth for the digital content reserved in response to the request by the particular consumer by the resource reservation server is guaranteed in a shared bandwidth of the subscriber lines (page 3 lines 3-9, page 4 lines 12-26, page 44 lines 3-16).

38. Regarding claim 3, Wright disclosed a digital content downloading system using a network, wherein the particular bandwidth for the digital content reserved by the resource reservation server in response to the request by the particular consumer is guaranteed in a first signal having a wavelength differing from that of a second signal corresponding to a shared bandwidth of the subscriber lines (Abstract, Figures 1-2, 6, page 5 lines 5-10, lines 48-54, page 6 lines 7-12).

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39. Regarding claim 6, Caterisano disclosed a digital content downloading system using a network, wherein the content retailer is configured to charge the particular consumer for the downloading of the digital content according to the particular bandwidth reserved by the resource reservation server, a time period used for the downloading or a time zone used for the downloading (page 3 lines 3-9, page 4 lines 12-26, page 44 lines 3-16, page 45 lines 3-9).

40. Regarding claim 7, Caterisano disclosed a digital content downloading system using a network, wherein information of charges corresponding to a bandwidth used for the downloading of data including the digital content, a time period used for the downloading of data including the digital content, or a time zone used for the downloading of data including the digital content is transmitted from the network operator to the consumers (page 3 lines 3-9, page 4 lines 12-26, page 44 lines 3-16, page 45 lines 3-9).

41. Regarding claim 8, Caterisano disclosed a digital content downloading system using a network, wherein the digital content is a music file, a video file, or a game software title (page 3 lines 3-9).

42. Regarding claims 9-11 and 14-16, the limitations of these claims are similar to the system of claims 1-3 and 6-8, and thus these claims are rejected using the same rationale.

43. Regarding claim 17, Wright and Caterisano combined disclose a digital downloading system wherein the resource reservation server is arranged in the network separate from the optical line terminator and the optical networking units (Wright,

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Abstract, page 2 lines 3-18, page 4 lines 1-6; Caterisano, Figures 3, page 37 lines 12-27).

44. Regarding claim 18, Caterisano disclosed a digital downloading system wherein the resource reservation server is configured to reserve the particular bandwidth so that the particular bandwidth is reserved from a particular start time to a particular end time (page 4 lines 12-26).

45. Since all the limitations of the claimed invention were disclosed by the combination of Wright and Caterisano, claims 1-3, 6-8, 9-11, and 14-18 are rejected.

Response to Arguments

46. Applicant's arguments filed 02/09/2005 (February 9, 2005) have been fully considered but they are not persuasive.

47. Claims 1-5, 8, 9-13, and 16-18 are rejected under 35 U.S.C. 103(a) rejection as being unpatentable over Touma et al. (U.S. Patent Number 6,288,809), hereinafter referred to as "the '809 patent", in view of Matsunaga et al. (U.S. Patent Number 6,434,164), hereinafter referred to as "the '164 patent".

48. In response to applicants' argument "The '164 patent fails to disclose "downward bandwidth management means, arranged in an optical line terminator for controlling the downloading of the digital content from the digital content retailer to the optical network unit of the particular consumer, so that the digital content is transmitted through the subscriber lines and the star coupler at the particular bandwidth reserved by the resource reservation server", it is submitted that these arguments were addressed in specific details in the supplemental office action sent on 11/09/2004 in which the applicant did not comment or challenge the Examiner's reasoning in the response filed

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02/09/2005. For prosecution purposes, the Examiner will re-address these arguments to emphasize the Examiner's position.

49. The '164 patent disclosed a bandwidth management means and bandwidth reservation for both downward and upward transmission as should be evidenced by the following explanation. According to applicants' specification, downward bandwidth managing means controls the transmission of the digital content of a downward signal (page 7 lines 13-18, page 24 lines 19-29) and upward bandwidth managing means control the information of an upward signal transmitted in the upstream direction. Thus, bandwidth managing means controls the transmission of information in a downward and upward direction.

50. Refer to the '164 patent specifically Figures 2 and 11. In Figure 2, upstream signal (10a) is received at the reservation resource means (10f) and is forwarded to the resource control means (10m). In the same Figure 2, the downward signal (310) is received at the resource reservation and is forwarded to the bandwidth allocation means (311, 312) either bypassing or not bypassing the reservation information delay means (101). The downward signal (306, 301) is then transmitted to the downstream receiving means (10b). The '164 patent also disclosed:

"The upstream bandwidth allocating means 10i allocates an upstream bandwidth to the subscriber station based on the inputted reservation information 312 and 315 and outputs the upstream-bandwidth-grant information 306 to the downstream frame assembly means 10d. Also, the upstream bandwidth allocating means 10i, based on the assigned upstream bandwidth, outputs the upstream resource usage measurement information 316 to the upstream resource usage control means 10m.

The reservation-permit information transmission means 10j outputs a reservation-permit information 307 to the downstream frame assembly means 10d to collect reservation information. The downstream data transmission means

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10k performs transmission processing of downstream data and outputs a downstream data 308 to the downstream frame assembly means 10d.

The downstream frame assembly means 10d, assembles the inputted identifier assignment information 305, upstream-bandwidth-grant information 306, reservation-permit information 307 and downstream data 308 and converts these to a downstream frame 301 and outputs it to the downstream signal transmission means 10b. The downstream signal transmission means 10b modulates the inputted downstream frame 301 and outputs a downstream signal 200 to a downstream broadcasting channel" (column 1 lines 25-50).

51. Refer to column 10 of the '164 patent for a complete technical descriptions of the discussed features. Since the resource control means controls transmission of digital data in bi-directional direction, it should be obvious that the '164 patent disclosed bandwidth managing means controls the transmission of information both in downstream and upstream. Observing Figure 11, one of ordinary skills in the art would appreciate that the reservation bandwidth control means (12m) controls transmission of digital signal in both the downstream and upstream direction as shown by the bidirectional flows of direction 309 vs. direction 319 and direction 323 vs. direction 324. It should also be obvious that the downstream transmission of digital data from the center station to the subscriber station is analogous to the downloading of the digital content from the digital content retailer to the optical network unit of the particular consumer.

52. In response to applicants' argument "The '164 patent fails to disclose that a downward bandwidth management means is arranged in an optical line terminator for controlling downloading of data," it is submitted that optical line terminator as described by the applicants' specification is arranged in an office of a network operator, for terminating a main subscriber line formed of an optical fiber (Applicant specification

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page 4 lines 2-5). The '164 patent disclosed a downward bandwidth management means arranged in a center station, arranged in an office of a network operator, for terminating a main subscriber line formed of an optical fiber and for controlling the transmission or downloading of the digital content data. Thus it is apparent that the '164 patent disclosed the above argued limitation.

53. In addition, as disclosed by applicant prior art (specification page 1-5 and Figure 18), a Passive Optical Network (PON) comprising components such as optical network units, optical line terminator, star coupler, subscriber lines, etc. was well known at the time of the invention. The PON described in applicants' invention is the same as that of the convention PON plus some additional features (Refer to Figure 3 and Figure 18 for comparison). The conventional PON according to industry standard consists of an optical line terminator located at the central office and a set of associated optical network terminals located at the customer's premise. The '164 patent disclosed a bandwidth management means arranged in a center station for terminating a main subscriber line formed of an optical fiber and for controlling the transmission of the digital content data. It would have been obvious for one of ordinary skill in the art to recognize that the Central Office and the Center Station is one of the same. Thus it is apparent that the '164 patent disclosed the argued limitation above.

54. In response to applicant's comment that is unclear to applicant which elements in such a combined system would correspond to the claimed digital content provider and which would correspond to the optical network units associated with the consumers. It is submitted that one of ordinary skill in the art at the time of the invention would have recognize that the subscriber station in the patent '164 and the ONU in the patent '809

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would be analogous to the optical network units associated with the consumer. Since the patent '809 and '164 involves transmitting of digital data, it should be obvious that the digital content server is at least located in the service station unit/center station or connected to the service station unit/center station in order to supply the communication system of the patent '809 and '164 with digital contents.

55. Applicant acknowledged the patent of '164 disclosed the upstream bandwidth reservation (See Remarks page 12 paragraph 4-page 13 paragraph 1). Thus, in response to applicant's argument regarding claim 9, it is respectfully submitted that the response from claim 1 is applicable to the argued limitations.

56. In response to applicant's argument that the '634 patent and '235 patent fail to disclose downward bandwidth managing means, arranged in an optical line terminator, for controlling downloading of digital content...", the Examiner respectfully disagrees. It is submitted that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the patent '634 was relied upon to disclose the optical line terminator having a control information generating portion (Figure 16) and the patent '235 was relied upon to disclose the bandwidth managing means.

57. As the rejection reads, Examiner asserts that the combination of these teachings render the claimed invention obvious.

Conclusion

58. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

59. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Refer to the enclosed PTO-892 for details.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam (Jenny) Phan whose telephone number is (571) 272-3930. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Wiley
SPE
Art Unit 2143
(571) 272-3923

tp
May 6, 2005



DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100